

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



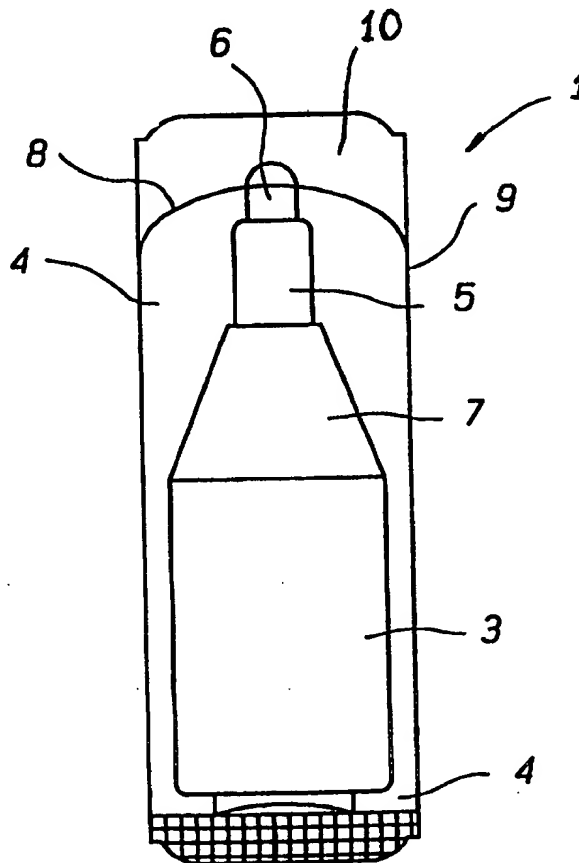
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : B65D 75/58		A1	(11) International Publication Number: WO 97/48619 (43) International Publication Date: 24 December 1997 (24.12.97)
(21) International Application Number: PCT/EP97/03100 (22) International Filing Date: 16 June 1997 (16.06.97) (30) Priority Data: MO96A000080 18 June 1996 (18.06.96) IT (71) Applicant (for all designated States except US): UNIFILL INTERNATIONAL A/G [CH/CH]; Hauptstrasse 14, D-8280 Kreuzlingen (CH). (72) Inventor; and (75) Inventor/Applicant (for US only): BARTOLI, Andrea [IT/IT]; Via Victor Hugo, 23 - Fraz. Canali, I-42100 Reggio Emilia (IT). (74) Agent: LUPPI, Luigi; Luppi & Crugnola Studio Associato, Viale Virgilio, 56/F, I-41100 Modena (IT).			(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

(54) Title: PACKAGING UNIT

(57) Abstract

Packaging unit (1) for a flowable product, comprising first and second walls (2, 3) at least one (3) of which is concave and which are sealingly joined along their respective edges and define therebetween a cavity containing the flowable product, at least one of the walls (2, 3) being provided with a severing indication (8), severing along a line indicated by the severing indication (8) and extending from side-to-side across the packaging unit (1) opening a product outlet portion (6) of the cavity; the severing indication (8) has over at least one of two end zones thereof at respective opposite sides (9) of the unit (1) a curvedly convex profile projecting away from the cavity.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakistan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

PACKAGING UNIT

The invention concerns a packaging unit for a flowable product.

The prior art comprises a container obtained from a pair of shells welded along respective edges and defining between them a cavity containing a flowable product. For the discharge of the product, such containers are transversely equipped with a predetermined fracture line whereby it is easy to open the container by application of a limited force to separate an end portion of the container from the body of the same. The predetermined fracture line extends across a tubular appendix of the cavity of the container and thus, when the container is broken there, opening of the appendix takes place through which the product can be expelled from the cavity by manual squashing of the shells.

In those containers, when the container is open, between the edge resulting from the breaking along the fracture line and respective opposite lateral edges of the container there are left sharp corners which can be dangerous for the consumer, being sharp and thus liable to cause excoriations or scratches. A container of this kind is disclosed in, for example, NL-B-167681.

Thus, such containers, which, because of their low cost, are, for example, generally used for packaging of single-dose disposable and free-of-charge samples, are not used for storing food products, or medicaments, because of their potential harm to consumers.

An object of the invention is to reduce considerably the danger of the above-mentioned containers, particularly to avoid harm to the consumer when they are open and a food product, or a medicament, is eaten or drunk therefrom.

According to the present invention, there is provided a packaging unit for a flowable product, comprising first and second walls at least one of which is concave and which are sealingly joined along their respective edges and define therebetween a cavity containing the flowable product, at least one of said walls being provided with a severing indicating means, severing along a line indicated by said severing indicating means and extending from side-to-side across the packaging unit opening a product outlet portion of said cavity, characterized in that said severing indicating means has over at least one of two end zones thereof at respective opposite sides of said unit a curvedly convex profile projecting away from said cavity.

Owing to the invention, it is possible to avoid the formation of sharp corners when opening the packaging unit, so that the packaging unit can be used for a medicament, or a food product, which are consumed directly from the packaging unit, without risk of harm to the consumer.

The severing indicating means may take the form of a mark, for example a printed line, which the consumer is intended to follow in cutting open the packaging unit to reveal the product outlet portion; however, the severing indicating means is preferably in the form of a weakness whereby the consumer can tear or break off an end portion of the packaging unit to reveal the product outlet portion.

The profile of the severing indicating means may be convexly curved from side-to-side of the unit, or may have a substantially rectilinear middle zone.

Advantageously, the packaging unit comprises two walls, at least one of which is concave, sealingly joined along respective edges and defining a cavity containing a flowable

product, the cavity being provided with an incision extending from side-to-side across the unit and thereby across a product outlet portion of the cavity, characterized in that the predetermined fracture line has a convex profile projecting away from the cavity.

The invention will be better understood and carried into practice by reference to the accompanying drawings, showing some embodiments of the invention, wherein:

- Figure 1 is a front view of a packaging unit;
- Figure 2 is a side view of the unit;
- Figure 3 is a top view of the unit;
- Figure 4 is a front view as in Figure 1, but of another embodiment;
- Figure 5 is a side view of that other embodiment;
- Figure 6 is a view similar to Figure 5, but of a further embodiment; and
- Figure 7 is a view similar to Figure 6, but of a yet further embodiment.

Referring to Figures 1 to 3, a packaging unit 1 is in the form of a substantially flat, first sheet 2 and a concave second sheet 3 joined along a peripheral weld 4 defining the edge of the unit, the unit having been produced by blow-thermoforming. The sheets 2 and 3 define a cavity including a tubular recess 6, bounded by the weld 4 on three sides; the cavity also includes a conduit 5 exiting into the recess 6 at one end and a funnel-shaped duct 7 leading to the conduit 5 from a main part of the cavity.

The recess 6 has transverse dimensions considerably less than the transverse dimensions of the conduit 5 which are, in turn, considerably less than the transverse dimensions of the main part of the cavity.

As a consequence, the weld 4 may be of increasing width from the main part of the cavity to the recess 6.

Referring to Figure 3, the recess 6 can have a lenticular transverse cross-section in order to act as a valve capable of obstructing accidental emission of the product and thus allowing exiting of the product only when the walls of the cavity are subjected to squashing.

The recess 6 is transversely provided with a predetermined fracture line 8 extending sideways for all of the widths of corresponding opposite portions of the weld 4 and having a convexly curved profile substantially merging with corresponding lateral edges 9 of the unit 1.

Therefore, when a consumer wishes to eat or drink the product, or to take a medicine packaged in the unit, he can simply tear off a removable portion 10 of the weld 4, so obtaining an open container without sharp corners.

The embodiment shown in Figures 4 and 5 consists of oppositely disposed, symmetrical shells 3 and has its lateral edges 9 provided with recesses 11 to facilitate opening. As shown in Figure 4, the predetermined fracture line 8 is combined with the bases of the recesses 11, so as to define a significantly obtuse angle A between the curved end zone of the line 8 and one side of the recess 11, at each side of the cavity (the reference A actually indicates the angle between the tangent T to an end of the fracture line 8 and the side of the recess 11). The reference B indicates a significantly obtuse angle between an edge 9 and an adjacent side of the recess 11.

The angles A, B are sufficient (preferably at least 135° , for example approximately 150°) to avoid the open container harming the consumer.

As shown in Figures 6 and 7, the packaging unit can be of a stand-up character, with a concave bottom 12, or with a flat bottom 13.

The packaging unit 1 can be obtained by, for example, blow-thermoforming as described in WO94/08852.

Furthermore, the predetermined fracture line 8 may be obtained by an incision punch, with incision means shaped substantially according to the profile of the fracture line. The external profile of the weld 4, including the recesses 11, if any, can be made of any suitable shape by means of shaped cutting punches.

CLAIMS

1. Packaging unit (1) for a flowable product, comprising first and second walls (2, 3) at least one (3) of which is concave and which are sealingly joined along their respective edges and define therebetween a cavity containing the flowable product, at least one of said walls (2, 3) being provided with a severing indicating means (8), severing along a line indicated by said severing indicating means (8) and extending from side-to-side across the packaging unit (1) opening a product outlet portion (6) of said cavity, characterized in that said severing indicating means (8) has over at least one of two end zones thereof at respective opposite sides (9) of said unit (1) a curvedly convex profile projecting away from said cavity.

2. Packaging unit according to claim 1, wherein said indicating means (8) comprises an incision (8) defining a predetermined fracture line.

3. Packaging unit according to claim 1 or 2, wherein said indicating means (8) has a curvedly convex profile from one of said sides (9) to the other of said sides (9).

4. Packaging unit according to claim 1 or 2, wherein said indicating means (8) has a rectilinear middle zone.

5. Packaging unit according to any preceding claim, wherein at at least one end of said indicating means (8) is a recess (11) in said respective edges and to the base of which said indicating means (8) extends.

7

6. Packaging unit according to claim 5, wherein the or each recess (11) has a substantially rectilinear boundary portion defining, together with said indicating means (8), a significantly obtuse angle.

1/3

Fig.1

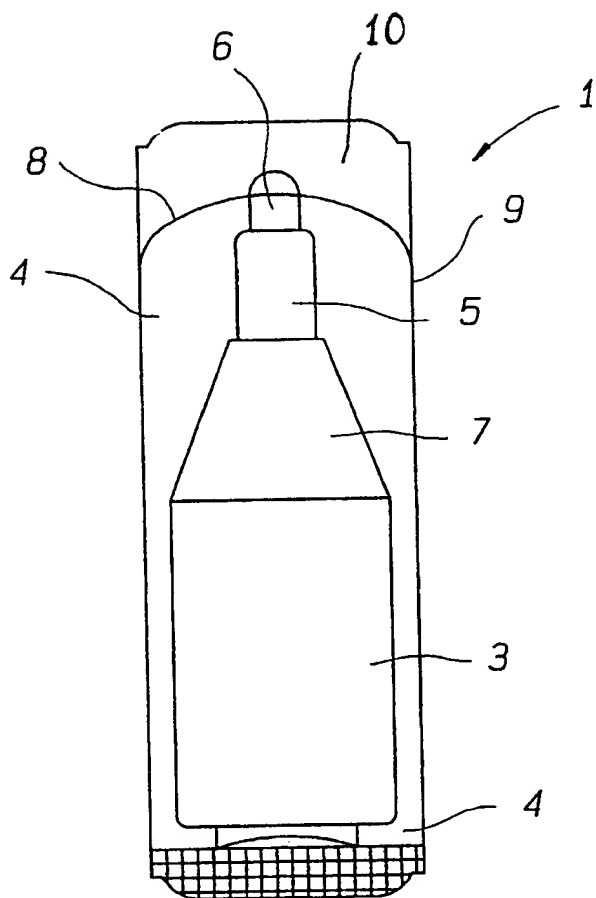


Fig.2

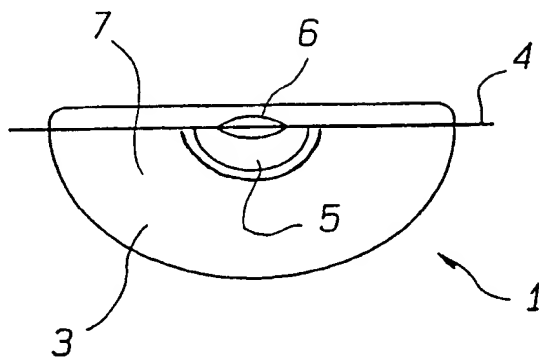
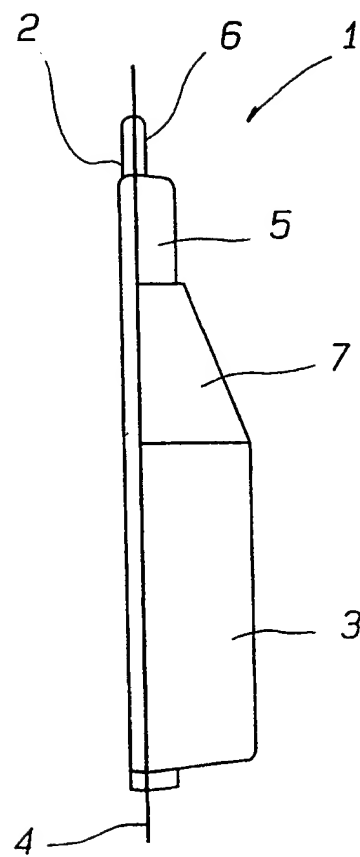


Fig.3

2/3

Fig. 4

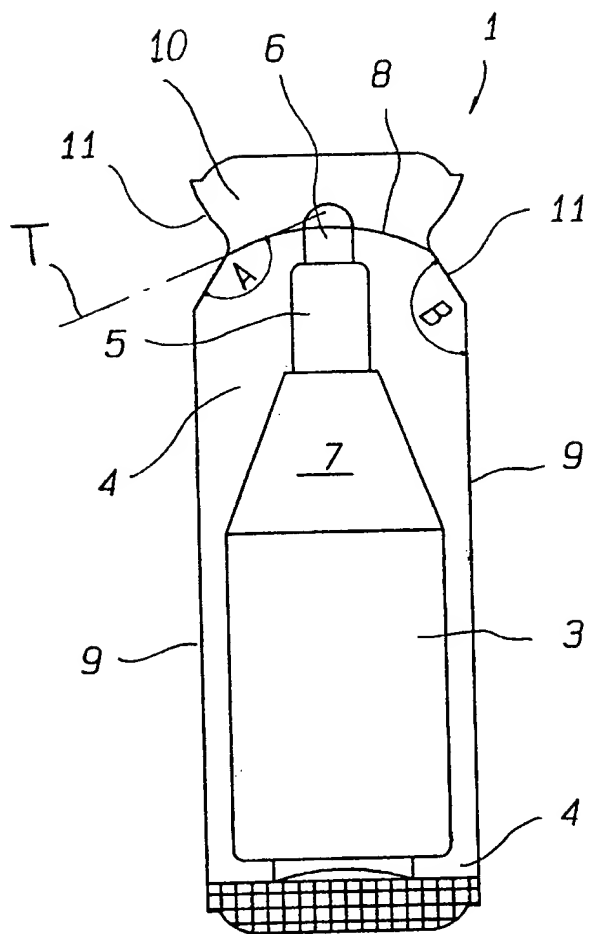
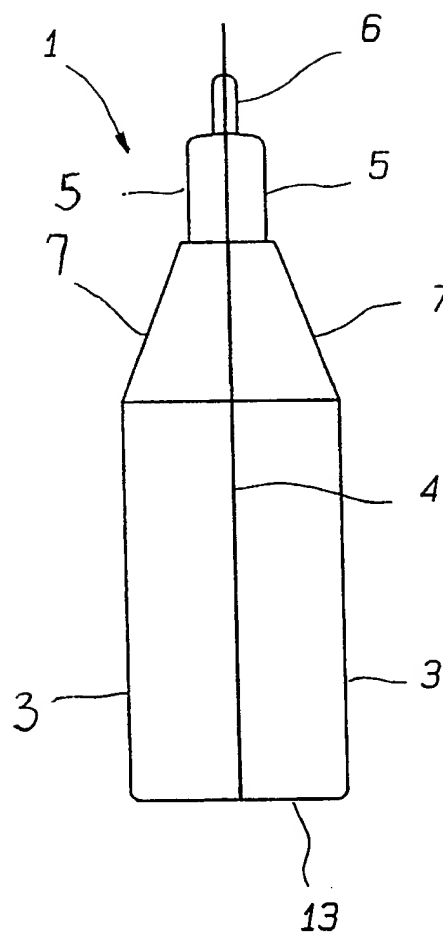


Fig. 7



3/3

Fig.5

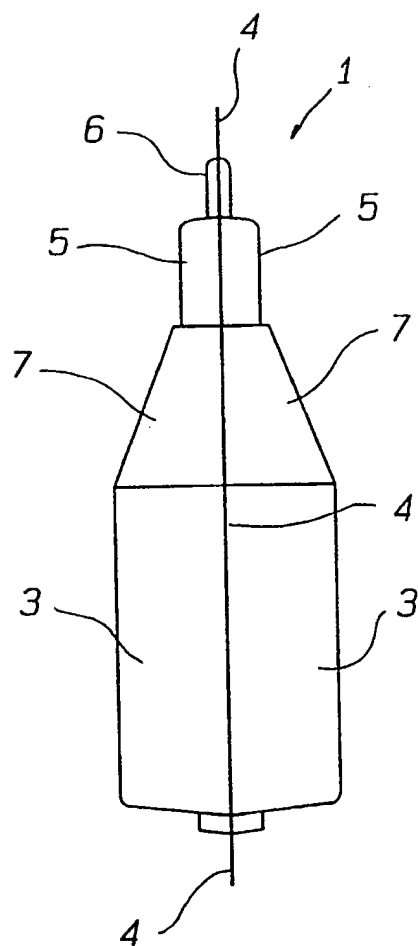
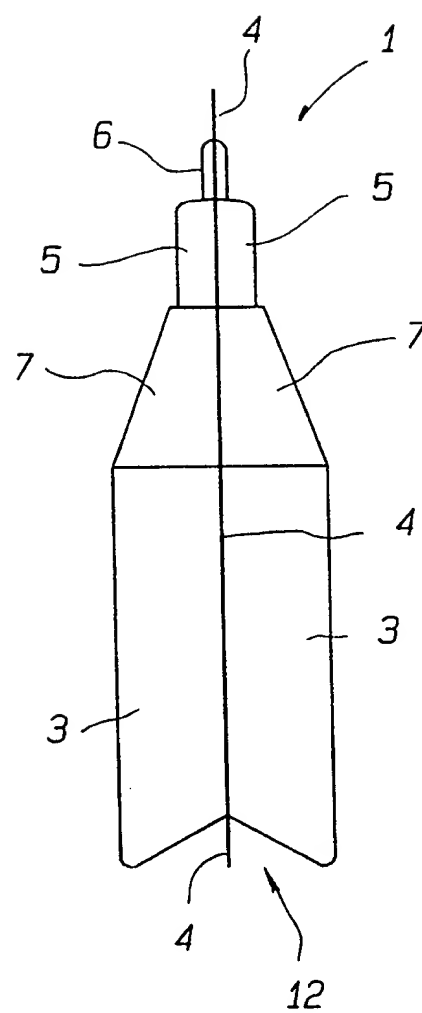


Fig.6



INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 97/03100

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 B65D75/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 299 562 A (HSM) 18 January 1989 see column 3, line 54 - column 4, line 23; figures ---	1,2,5,6
A	EP 0 210 428 A (BROGLI WERNER) 4 February 1987 see abstract; figures see page 8, line 3 - line 31 ---	1,2,5,6
A	US 4 648 506 A (CAMPBELL ROLF W J) 10 March 1987 see abstract; figures ---	1
A	NL 167681 B (UNILEVER N.V.) 15 February 1956 * figure 1 * XP002029925 -----	1

☐

Further documents are listed in the continuation of box C.

☒

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

16 October 1997

Date of mailing of the international search report

22. 10. 97

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

SERRANO GALARRAGA, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 97/03100

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0299562 A	18-01-89	NL 8701700 A	16-02-89
		CA 1325188 A	14-12-93
		JP 1111680 A	28-04-89
		US 4921137 A	01-05-90

EP 0210428 A	04-02-87	DE 3526113 A	29-01-87
		JP 2545368 B	16-10-96
		JP 62028356 A	06-02-87
		US 4792060 A	20-12-88

US 4648506 A	10-03-87	NONE	

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 97/03100

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 B65D75/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 299 562 A (HSM) 18 January 1989 see column 3, line 54 - column 4, line 23; figures	1,2,5,6
A	EP 0 210 428 A (BROGLI WERNER) 4 February 1987 see abstract; figures see page 8, line 3 - line 31	1,2,5,6
A	US 4 648 506 A (CAMPBELL ROLF W J) 10 March 1987 see abstract; figures	1
A	NL 167681 B (UNILEVER N.V.) 15 February 1956 * figure 1 * XP002029925	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

16 October 1997

Date of mailing of the international search report

22. 10. 97

Name and mailing address of the ISA

European Patent Office, P.O. 5218 Patentaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 opornl,
Fax: (+31-70) 340-3016

Authorized officer

SERRANO GALARRAGA, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 97/03100

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0299562 A	18-01-89	NL 8701700 A	16-02-89
		CA 1325188 A	14-12-93
		JP 1111680 A	28-04-89
		US 4921137 A	01-05-90
EP 0210428 A	04-02-87	DE 3526113 A	29-01-87
		JP 2545368 B	16-10-96
		JP 62028356 A	06-02-87
		US 4792060 A	20-12-88
US 4648506 A	10-03-87	NONE	

PATENT COOPERATION TREATY

REC'D 25 MAR 1998

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 97150PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (PCT/IPEA/416)	
International application No. PCT/EP97/03100	International filing date (day/month/year) 16/06/1997	Priority date (day/month/year) 18/06/1996
International Patent Classification (IPC) or national classification and IPC B65D75/58		
Applicant UNIFILL INTERNATIONAL A/G et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 16/12/1997	Date of completion of this report 20. 03. 98
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Lendfers, P Telephone No. (+49-89) 2399-2933



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP97/03100

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-5 as originally filed

Claims, No.:

1-6 as originally filed

Drawings, sheets:

1/3-3/3 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP97/03100

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1-6
	No: Claims
Inventive step (IS)	Yes: Claims 1-6
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-6
	No: Claims

2. Citations and explanations

see separate sheet

The invention relates to a packaging unit for a flowable product, comprising first and second walls at least one of which is concave and which are sealingly joined along their respective edges and define therebetween a cavity containing the flowable product, at least one of said walls being provided with a severing indicating means, severing along a line indicated by the severing indicating means and extending from side-to-side across the packaging unit opening a product outlet portion of said cavity.

The invention is based on document NL-B-167 681, which appears to be the closest prior art document and which discloses the features of the preamble of independent claim 1.

According to the invention as defined in claim 1, the severing means has over at least one of the two end zones thereof at respective opposite sides of the unit a curvedly convex profile projecting away from the cavity. Owing to the invention, it is possible to avoid the formation of sharp corners when opening the packaging unit, so that the packaging unit can be used for a medicament, or a food product, which are consumed directly from the packaging unit, without risk of harm to the consumer.

The combination of the features of independent claim 1 is neither known from, nor rendered obvious by, the available prior art. Therefore, the subject-matter of claim 1 is new and inventive (Articles 33(2) and 33(3) PCT).

The subject-matter of dependent claims 2 to 6 fulfils as well the requirements of novelty and inventive step. Furthermore, claims 1 to 6 are considered as susceptible of industrial application.

PATENT COOPERATION TREATY

~~PCT~~

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year)

13 January 1998 (13.01.98)

International application No.

PCT/EP97/03100

Applicant's or agent's file reference

97150PCT

International filing date (day/month/year)

16 June 1997 (16.06.97)

Priority date (day/month/year)

18 June 1996 (18.06.96)

Applicant

BARTOLI, Andrea

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

16 December 1997 (16.12.97)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Aino Metcalfe

Telephone No.: (41-22) 338.83.38

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

To:

Luppi, Luigi
LUPPI & CRUGNOLA
Studio Associato
Viale Virgilio 56/I
41100 MODENA
ITALIE

Date of mailing
(day/month/year)

20.03.98

Applicant's or agent's file reference
97150PCT

IMPORTANT NOTIFICATION

International application No.
PCT/EP97/03100

International filing date (day/month/year)
16/06/1997

Priority date (day/month/year)
18/06/1996

Applicant

UNIFILL INTERNATIONAL A/G et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the International application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the International application must be furnished to an elected Office, that translation must contain a translation of any annexes to the International preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



European Patent Office
D-80298 Munich
Tel. (+49-89) 2399-0, Tx: 523656 epmu d
Fax: (+49-89) 2399-4465

Authorized officer

Loeper, S

Tel. (+49-89) 2399-2569



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 97150PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (PCT/IPEA/416)
International application No. PCT/EP97/03100	International filing date (day/month/year) 16/06/1997	Priority date (day/month/year) 18/06/1996
International Patent Classification (IPC) or national classification and IPC B65D75/58		
Applicant UNIFILL INTERNATIONAL A/G et al.		

1. This International preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 16/12/1997	Date of completion of this report 20.03.98
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2398-0, Tx: 523858 spmu d Fax: (+49-89) 2398-4465	Authorized officer Landfers, P Telephone No. (+49-89) 2398-2933 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP97/03100

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-5 as originally filed

Claims, No.:

1-6 as originally filed

Drawings, sheets:

1/3-3/3 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP97/03100**

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-6
	No:	Claims	

Inventive step (IS)	Yes:	Claims	1-6
	No:	Claims	

Industrial applicability (IA)	Yes:	Claims	1-6
	No:	Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP97/03100

The invention relates to a packaging unit for a flowable product, comprising first and second walls at least one of which is concave and which are sealingly joined along their respective edges and define therebetween a cavity containing the flowable product, at least one of said walls being provided with a severing indicating means, severing along a line indicated by the severing indicating means and extending from side-to-side across the packaging unit opening a product outlet portion of said cavity.

The invention is based on document NL-B-167 681, which appears to be the closest prior art document and which discloses the features of the preamble of independent claim 1.

According to the invention as defined in claim 1, the severing means has over at least one of the two end zones thereof at respective opposite sides of the unit a curvedly convex profile projecting away from the cavity. Owing to the invention, it is possible to avoid the formation of sharp corners when opening the packaging unit, so that the packaging unit can be used for a medicament, or a food product, which are consumed directly from the packaging unit, without risk of harm to the consumer.

The combination of the features of independent claim 1 is neither known from, nor rendered obvious by, the available prior art. Therefore, the subject-matter of claim 1 is new and inventive (Articles 33(2) and 33(3) PCT).

The subject-matter of dependent claims 2 to 6 fulfils as well the requirements of novelty and inventive step. Furthermore, claims 1 to 6 are considered as susceptible of industrial application.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 97150PCT	FOR FURTHER ACTION <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. PCT/EP 97/03100	International filing date (day/month/year) 16/06/1997	(Earliest) Priority Date (day/month/year) 18/06/1996
Applicant UNIFILL INTERNATIONAL A/G et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (see Box I).
2. ☐ Unity of invention is lacking (see Box II).
3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing

☐ filed with the international application.
☐ furnished by the applicant separately from the international application,

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ Transcribed by this Authority
4. With regard to the title, ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:
5. With regard to the abstract, ☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is:
 Figure No. 1 ☒ as suggested by the applicant. ☐ None of the figures.
☐ because the applicant failed to suggest a figure.
☐ because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 97/03100

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 B65D75/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 299 562 A (HSM) 18 January 1989 see column 3, line 54 - column 4, line 23; figures ---	1,2,5,6
A	EP 0 210 428 A (BROGLI WERNER) 4 February 1987 see abstract; figures see page 8, line 3 - line 31 ---	1,2,5,6
A	US 4 648 506 A (CAMPBELL ROLF W J) 10 March 1987 see abstract; figures ---	1
A	NL 167681 B (UNILEVER N.V.) 15 February 1956 * figure 1 * XP002029925 -----	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

16 October 1997

Date of mailing of the international search report

22. 10. 97

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

SERRANO GALARRAGA, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 97/03100

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0299562 A	18-01-89	NL 8701700 A CA 1325188 A JP 1111680 A US 4921137 A	16-02-89 14-12-93 28-04-89 01-05-90
EP 0210428 A	04-02-87	DE 3526113 A JP 2545368 B JP 62028356 A US 4792060 A	29-01-87 16-10-96 06-02-87 20-12-88
US 4648506 A	10-03-87	NONE	